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(54) Title: CHORIONIC SOMATOMAMMOTROPIN HORMONE SPLICE VARIANTS

QUERY: 1 HAPGSRISLLAFALLCLPMLQAGAVTVPLSLPDMQARBAQLAIDTYQFVSS 60  
HAPGSRISLLAFALLCLPMLQAGAVTVPLSLPDMQARBAQLAIDTYQF +  
SUBCT: 1 HAPGSRISLLAFALLCLPMLQAGAVTVPLSLPDMQARBAQLAIDTYQFPT 60  
\*\*\*

QUERY: 61 W-----GDSIPPSGSGTQQKSLALLISLLISLMSLPVPLR 102  
+  
DSIPPSGSGTQQKSLALLISLLISLMSLPVPLR  
SUBCT: 61 YTPKQVSLFSDSQTSPFSDSIPPSGSGTQQKSLALLISLMSLPVPLR 120  
\*\*\*\*\*

QUERY: 163 SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD 162  
SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD  
SUBCT: 121 SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD 180

QUERY: 163 ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF 199  
ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF  
SUBCT: 181 ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF 217

QUERY: 1 HAPGSRISLLAFALLCLPMLQAGAVTVPLSLPDMQARBAQLAIDTYQFVSS 60  
HAPGSRISLLAFALLCLPMLQAGAVTVPLSKLPDMQARBAQLAIDTYQF +  
SUBCT: 1 HAPGSRISLLAFALLCLPMLQAGAVTVPLSKLPDMQARBAQLAIDTYQFPT 60  
\*\*\*

QUERY: 61 W-----GDSIPPSGSGTQQKSLALLISLLISLMSLPVPLR 102  
+  
DSIPPSGSGTQQKSLALLISLLISLMSLPVPLR  
SUBCT: 61 YTPKQVSLFSDSQTSPFSDSIPPSGSGTQQKSLALLISLMSLPVPLR 120  
\*\*\*\*\*

QUERY: 163 SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD 162  
SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD  
SUBCT: 121 SHFANLVYDTSDDYHLAKLEBGIQYLMHLEDSGRTQQLAQYTSKFDNSHSD 180

QUERY: 163 ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF 199  
ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF  
SUBCT: 181 ALLANTGLLYCPKDMKVETPLRHQCSYVSGSCF 217

(57) Abstract: The invention is based on the discovery that the INSP100 is a novel splice variant of human chorionic somatomammotropin hormone 2 (HCS-B; Q14407) and that INSP104 is a novel splice variant of human Chorionic somatomammotropin hormone 1 (hCS-A; P01243).



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/05605

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/575 C12N15/00 A61K38/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search, BIOSIS, PAJ, FSTA, EMBASE, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE UniProt 'Online!  1 November 1996 (1996-11-01), "Chorionic  somatomammotropin CS-5."  XP002304199  retrieved from EBI accession no.  UNIPROT:Q14406  Database accession no. Q14406  the whole document  -&amp; VNENCAK-JONES C L ET AL: "HOT SPOTS  FOR GROWTH HORMONE GENE DELETIONS IN  HOMOLOGOUS REGIONS OUTSIDE OF ALU REPEATS"  SCIENCE, AMERICAN ASSOCIATION FOR THE  ADVANCEMENT OF SCIENCE,, US,  vol. 250, 21 December 1990 (1990-12-21),  pages 1745-1748, XP002044349  ISSN: 0036-8075</p> <p style="text-align: center;">-----  -/-</p>	1-45

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/GB 03/05605

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHEN E Y ET AL: "THE HUMAN GROWTH HORMONE LOCUS: NUCLEOTIDE SEQUENCE, BIOLOGY, AND EVOLUTION" GENOMICS, ACADEMIC PRESS, SAN DIEGO, US, vol. 4, no. 4, 1989, pages 479-497, XP000990095 ISSN: 0888-7543 -&amp; DATABASE GENE BANK 8 November 1994 (1994-11-08), CHEN E Y ET AL: "HUMAN GROWTH HORMONE (GH-1 AND GH-2) AND CHORIONIC SOMATOMAMMOTROPIN (CS-1, CS-2 AND CS-5) GENES, COMPLETE CDS" XP002185150 retrieved from GENE BANK Database accession no. J03071 the whole document</p>	
A	<p>HIRT H ET AL: "THE HUMAN GROWTH HORMONE GENE LOCUS STRUCTURE EVOLUTION AND ALLELIC VARIATIONS" DNA (NEW YORK), vol. 6, no. 1, 1987, pages 59-70, XP009039318 ISSN: 0198-0238 -&amp; DATABASE SWISSPROT 25 October 2004 (2004-10-25), "Chorionic somatomammotropin hormone precursor (Choriomammotropin) (Lactogen)" XP002304200 retrieved from SWISSPROT Database accession no. P01243 abstract</p>	
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A	<p>SEEBURG P H: "THE HUMAN GROWTH HORMONE GENE FAMILY NUCLEOTIDE SEQUENCES SHOW RECENT DIVERGENCE AND PREDICT A NEW POLY PEPTIDE HORMONE" DNA (NEW YORK), vol. 1, no. 3, 1982, pages 239-250, XP001058450 ISSN: 0198-0238</p>	
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Int. Application No

PCT/GB 03/05605

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SCHNEIDER A B ET AL: "IDENTIFICATION OF THE INTER CHAIN DI SULFIDE BONDS OF DIMERIC HUMAN PLACENTAL LACTOGEN" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 254, no. 10, 1979, pages 3782-3787, XP002304196 ISSN: 0021-9258	
A	SHINE J ET AL: "Construction and analysis of recombinant DNA for human chorionic somatomammotropin." NATURE. 8 DEC 1977, vol. 270, no. 5637, 8 December 1977 (1977-12-08), pages 494-499, XP009039351 ISSN: 0028-0836	
A	SHERWOOD L M ET AL: "AMINO-ACID SEQUENCE OF HUMAN PLACENTAL LACTOGEN" NATURE NEW BIOLOGY, vol. 233, no. 36, 1971, pages 59-61, XP009039319 ISSN: 0090-0028	
A	TODA Y ET AL: "Alu elements as an aid in deciphering genome rearrangements." GENE. 31 DEC 1997, vol. 205, no. 1-2, 31 December 1997 (1997-12-31), pages 173-176, XP002304198 ISSN: 0378-1119	
P,A	STRAUSBERG R L ET AL: "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 99, no. 26, 24 December 2002 (2002-12-24), pages 16899-16903, XP002964739 ISSN: 0027-8424	
A	SELBY M J ET AL: "ANALYSIS OF A MAJOR HUMAN CHORIONIC SOMATOMAMMOTROPIN GENE EVIDENCE FOR 2 FUNCTIONAL PROMOTER ELEMENTS" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 259, no. 21, 1984, pages 13131-13138, XP002304204 ISSN: 0021-9258	

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In International Application No  
PCT/GB 03/05605

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BARRERA-SALDANA H A ET AL: "2 STRUCTURALLY DIFFERENT GENES PRODUCE THE SAME SECRETED HUMAN PLACENTAL LACTOGEN HORMONE" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 258, no. 6, 1983, pages 3787-3793, XP002304205 ISSN: 0021-9258</p>	
A	<p>BARSH G S ET AL: "The human growth hormone gene family: structure and evolution of the chromosomal locus." NUCLEIC ACIDS RESEARCH. 25 JUN 1983, vol. 11, no. 12, 25 June 1983 (1983-06-25), pages 3939-3958, XP002304206 ISSN: 0305-1048</p>	